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Product Liability: Status and Future

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This paper presents the seriousness of the product liability problem that faces the engineer and manufacturer. It also presents the reasons for the growth in attention paid to product liability. The paper continues with a discussion of the impact of product liability on the manufacturer, and examines the role of the Consumer Product Safety Commission on product safety. The discussion also deals with what the future impact of laws relating to product safety are likely to be. The concluding material summarizes steps that can be taken to mitigate these impacts.

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INTRODUCTION

The design, manufacture, and sale of an inexpensive, reliable, and safe product is the goal of both the maker and user of all products. Therefore, in light of this desire on the part of all concerned, why does the product liability problem exist? The last several years has witnessed an astonishing increase in the annual number of product liability suits. Ten to fifteen years ago, the annual number of such suits was less than 5000. The current level is already in excess of 500,000 suits annually. The dollar value of the settlements of these suits has also risen dramatically. Six figure settlements are not uncommon; a few have even reached as high as eight figures in size. Among the reasons advanced for the seriousness of this situation are three of interest to the Engineer:

- 1 Change in the legal attitude toward product liability from "Caveat Emptor" to "Caveat Vendor" — "let the buyer beware" to "let the seller beware"!
- 2 The apparent decrease in the quality and reliability of product!
- 3 New legislation — local, state, and Federal — that attempts to protect the consumer of products and services.

DEFINING PRODUCT LIABILITY

Before going further, it will be necessary to understand what is meant by the term, product liability. The first word, product, does not mean just "the physical thing." When the word product is used in the term product liability, it encompasses activities and items associated with the physical thing, such as design, materials selection, production, testing, inspection, packing and packaging, distribution, and instructions for installation, use, and maintenance. The word product has been further expanded to include not only a physical thing with its associated activities, but to include services and their associated activities. However, for this paper, product

will essentially be thought of as a physical thing rather than as a service, although what is stated for one can be applied to the other as well.

The second part of the term being defined, liability, means "the state of being held responsible for a loss." The type of loss can vary from injury to commercial loss. But of more importance to the discussion is to answer the question, loss due to what? The answer: due to a defective product.

Now there has to be a definition of what constitutes a defective product. A product may be defective due to a design fault, workmanship errors, test omissions, material substitutions, inspection errors and omissions, inadequate markings or warnings, inadequate or improper instructions, inadequate packing or packaging, improper installation of maintenance, misleading advertising, or improper marketing. Whether or not a product is defective is also related to its foreseeable use, the state of the art not only at the time of production but also at the time of the loss, and what would be considered defective or unsafe by a "reasonable man."

From this, it is obvious that the engineer has to be very deeply involved in the problem of product liability. There is a great need for sound engineering judgement, because engineers have primary responsibilities in the product defect causing areas mentioned earlier, such as design, production, quality control, installation, test, and maintenance.

PRODUCT LIABILITY LAW

Years ago, a manufacturer felt safe from product liability (PL) action because of the legal concept called "privity of contract" as outlined in the 1842 Winterbottom versus Wright case. In this case, the court stated in its opinion:

"There is no privity of contract between

these parties, and if the plaintiff can sue, every passenger, or even any person passing along the road, who was injured by the upsetting of the coach, might bring a similar action. Unless we confine the operation of such contracts as this to the parties who entered into them, the most absurd and outrageous consequences to which I can see no limit would ensue."

This essentially meant that the purchaser could only sue the person with whom he had a contract covering the purchase of the product, i.e., the retailer. Since the purchaser did not obtain the product from the manufacturer, and the retailer had no part in the manufacturing of the defective product, the purchaser was left holding the bag. These were the days of "Caveat Emptor" — let the buyer beware! This rule of privity, with few exceptions, remained well entrenched in the annals of jurisprudence of the United States until 1916.

In the 1916 MacPherson versus Buick case, the buyer got a major break. In this case, MacPherson was driving a Buick automobile when the car collapsed. The New York Court of Annals, speaking through Justice Cardozo, held that the manufacturer was liable, in the absence of privity, for injuries resulting from the use of a product whether or not inherently dangerous if there was evidence of negligence in design, manufacture, and assembly of the product. The court in MacPherson stated:

"If the nature of a thing is such that it is reasonably certain to place life and limb in peril when negligently made, it is then a thing of danger. Its nature gives warning of the consequences to be expected. If, to the element of danger there is added knowledge that the thing will be used by persons other than the purchaser, and used without new tests, then, irrespective of contract, the manufacturer of this thing of danger is under a duty to make it carefully."

Thus, the concept of privity of contract was abandoned, even destroyed. A product purchaser is not able to reach beyond his immediate contractual contract, in this case, the automobile dealer, and sue the manufacturer. It is important to note that in order to recover, the plaintiff had to prove that the manufacturer had been negligent. This requirement gave rise to a number of problems. These problems were partially solved by the theory of Warranty and the Uniform

Commercial code. These instruments are not the subject of this paper.

Since that time, many additional legal decisions have opened wide the breach which allows a product consumer to sue "any and all" from the retailer through to the manufacturer, parts supplier, on down to the designer and quality engineer who may have contributed to the faulty product. The impetus for the most recent sequence of changes in liability law was derived from two significant cases, Henningsen versus Bloomfield Motors and Greenman versus Yuba Power Products Inc. The former was a case in which the plaintiff was injured, sued a dealer, the manufacturer of record and the supplier. The plaintiff was awarded a judgement which wiped out again the theory of privity and which also established the precedent that the manufacturer of record is responsible for the errors of his suppliers, even though the discovery of a defect by the manufacturer of record would have been difficult. In the latter case (Greenman), the purchaser of a power tool, a combination saw-drill lathe, sued the manufacturer. While the plaintiff was using the tool as a lathe for turning a large piece of wood he wished to make into a chalice, the wood flew out of the machine and struck him on the forehead, inflicting serious injuries. The California Supreme Court held:

"A manufacturer is strictly liable in tort when an article he places on the market, knowing that it is to be used without inspection for defects, proves to have a defect that causes injury to a human being." "The purpose of such liability is to insure that the costs of injuries resulting from defective products are borne by the manufacturer that put such products on the market rather than by the injured persons who are powerless to protect themselves."

These and other cases contributed to the development of the Restatement of Torts (Second) prepared by the American Law Institute. This body of law contained Section 402A in particular, which concisely summarized the recent products liability cases as follows:

§402A — Special Liability of Seller of Product for Physical Harm to User or Consumer

1 One who sells any product in a defective condition unreasonably dangerous to the user or consumer or to his property is subject to liability for physical harm thereby caused to the ultimate user or consumer, or to his property, if

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- a The seller is engaged in the business of selling such a product
- b It is expected to and does reach the user or consumer without substantial change in the condition in which it is sold.

2 The rule stated in subsection 1 applies, although

- a The seller has exercised all possible care in the preparation and sale of his product.
- b The user or consumer has not bought the product from or entered into any contractual relation with the seller.

Essentially, this theory permitted those injured or suffering a property loss to sue, for financial satisfaction, anyone in the chain of commerce. This literally means any organization or anyone normally engaged in the sale of goods or services regardless of their relationship to those experiencing the loss. Not only has this been a time of change in the law, the public attitude toward product quality and reliability has also changed. Mass production made most goods available both in price and quantity, to the general public. But, the public was told that in return for mass produced, low priced goods, they had to be willing to accept some defective merchandise. The defectives were supposed to be an inherent characteristic of mass production. But as technology advanced, and products grew more complex, the price of these goods rose. The consumer began to be unwilling to accept the "you have to expect some defectives" theory for these new higher priced goods. With the improvement in communications, consumers began to publicize their problems and groups/agencies compared their notes, and as a result the consumer became further dissatisfied with the acceptable quality levels tolerated by the manufacturer.

Product sophistication with its high price tag resulted in cost cutting competition. The cost cutting resulted in less expensive — often inferior — materials being used in the product in order to reduce its price.

This feeling of dissatisfaction by the consumer with product quality and reliability was ensued by public crusaders and politicians alike. City, state, and the federal government enacted laws to protect the helpless consumer. Publicity was given to large product liability suit settlements, and crusaders, such as Ralph Nader, attracted a large following. The uproar was loud enough to cause the creation of a

National Commission on Product Safety. This Commission was followed with the enactment of the Consumer Product Safety Act, and its attendant Consumer Product Safety Commission, which has now been in operation for over a year. Congress continues to discuss more stringent consumer protection laws, and the establishment of a Consumer Protection Agency seems to be only a matter of time.

THE CONSUMER PRODUCT SAFETY ACT

The impact of product liability on industry was brought to a climax when the Consumer Product Safety Act (CPSA) was signed on October 27, 1972. This law created a Consumer Product Safety Commission (CPSC), that was to administer this law, along with other existing safety laws. It took over six months before the Commission was given birth by the appointment, in May 1973, of four out of the five commissioners.

The CPSA defines consumer product to mean any article or component part thereof, used in and around the household, school, or for recreation. Excepted, because of coverage under other established laws are food, drugs, cosmetics, firearms, automobiles, airplanes, boats, economic poisons, tobacco, and medical devices. The Commission thus has surveillance over more than 11,000 consumer products, and its five members have a staff of 750 to aid them in this task. The Commission is currently funded at 30.9 million dollars, and besides its main office in Washington, D. C., has 14 field offices and laboratories. The purpose of the CPSA are to:

- 1 Protect the public against unreasonable risk of injury associated with consumer products.
- 2 Help the public judge comparative safety of products.
- 3 Provide for developing uniform consumer safety standards.
- 4 Promote research into the cause of product-related injuries and develop methods for prevention.

To date, the CPSC has established a computer system called NEISS (National Electronic Injury Surveillance System) which compiles information relative to consumer product caused injuries, directly from over 100 hospital emergency rooms. These results are being made public by means of a newsletter published every several months.

The Commission, under its authority to develop standards which can pertain to the per-

formance, composition, contents, design, construction, finish, packaging, warnings, or instructions for a product, has now published its first standard — the recently announced bicycle standard. With time, as the CPSC pursues the products listed in the list of top hazards published in the NEISS NEWS, more standards can be expected.

However, the Commission's greatest impact has been related to what is commonly called "Section 15(b)." This section requires the manufacturer, distributor, wholesaler, or retailer to report to the CPSC, within 24 hours, the existence of a "substantial product hazard." After notice and a hearing, the Commission has the authority to order one or more of the following:

- 1 Public notice be given of a defect
- 2 Mailing of a notice to persons known to have purchased the product
- 3 The product be brought into conformity with an applicable standard or be repaired
- 4 The product be replaced with a complying product, or a non-defective product
- 5 A refund of the purchase price of the product.

Failure to comply with the Commission's request can bring fines ranging from \$50,000 to \$500,000, and jail terms of up to one year. To date, neither fines nor jail terms have had to be levied. By mid-year, over 130 notices under 15(b) had been received for products ranging from television sets, gas stoves, lawn mowers, dishwashers, to spray paint.

The problem that the manufacturer has when a safety defect is discovered is to determine whether it is serious enough to report. What constitutes a "substantial hazard" has not been defined. If the manufacturer decides not to notify CPSC and events prove otherwise, he is subject to criticism, bad publicity, and subjection to civil and criminal penalties. On the other hand, if the company is "conscientious" and reports the defect, they are open for investigation by, and a defense of the product before, the CPSC.

Once a serious defect is discovered, an even bigger job lies ahead, tracing the product so that it can be recalled or repaired. Most consumer products do not lend themselves to the registration number type of follow-up and recording that the automobile does. Even in the cases where the manufacturer does make provisions for registration of ownership, the consumer dis-

regards the registration card and the flow of information is aborted.

Under 15(b), the manufacturer is faced with the task of informing company personnel and his distribution chain (distributors, wholesalers, and retailers) about the requirements of 15(b). He then has to establish a decision-making process to determine whether the CPSC is to be notified, and what action, such as recall or repair, is to be taken, independent of CPSC notification. Thirdly, a recall and notification system has to be established to clear the marketplace of the unsafe product. Fourth, a public relations and communications policy and procedure has to be established in order to inform the press and public of the status of the problem. Finally, the rights and duties in these matters for each member in the chain of distribution from the supplier to the manufacturer down through the retailer has to be established.

THE FUTURE OF PRODUCT LIABILITY/SAFETY

With the CPSA only two years old, the CPSC about a year and one half old, their impact has not yet been fully felt. What does the future hold in this area for the manufacturer and the engineer? There are two models that can be studied — one is of recent vintage, and the other is of long standing. The newer model is the OSHA law having been "born" about two years before the CPSA. It took about two years before OSHA impacted, and industry is now in the midst of adjustments to, and compliance with, the law. This model can be used as a leading indicator of what can be expected for the CPSA.

An older model, which is probably an accurate long-range model for the CPSA, is the FDA. Currently, products, drugs, and devices subject to FDA regulation have to be first cleared for marketing, then are subject to control and monitoring during marketing, and are subject to recall or ban, should the FDA find what they construe to be a potential hazard to the public. Extrapolating with this model, the manufacturer can look forward to: (a) more standards, (b) pre-market clearance of product design and manufacturing facilities, and (c) monitoring of product distribution and use. The CPSA has most of these powers already built into it; therefore, its only a matter of time before the FDA model is implemented.

As for the future impact of the law, here again the manufacturer may not like what is coming over the horizon. The trend in the courts of laying more of the responsibility for product safety in the lap of the manufacturer — protect

the user against himself — will continue. The legal pendulum will swing further, to a more extreme position, before there will be a return to a more "equal" division of responsibility for product safety between the product manufacturer and the product user.

PREVENTION OF THE P.L. PROBLEM

The prevention of P.L. problems has to begin with a total commitment on the part of top management. This phase, regularly mouthed, is, unfortunately, nonetheless true. Lower level employees quickly smell out the insincere managements.

Assuming a sincere management, the prevention program has to begin with the first thoughts on the product. All possible applications of uses for the product should be analyzed. The latest materials, methods, and processes should be considered. Safety, reliability, and maintenance have to be considered. A formal method for doing this is embodied in the Design Review Technique. A prevention program also calls for much testing — in the research, development, design, and manufacturing stages. These tests involve destructive and non-destructive test methods, life testing, physical tests, and environmental tests.

While the product design is being evaluated, the marketing and sales people are busy writing manuals and instruction booklets on how to properly use and service the product. These manuals and booklets will also warn against hazards being sure to state the consequences of invoking the hazard.

In addition, advertising, warranty, and guarantee claims are written and then scrutinized for truth in statements made pertaining to such product characteristics as uses, quality and reliability level, safety, life, and ease of maintenance.

Labels and tags also are designed to highlight hazards, restrictive practices, necessary practices, and important product identification information.

The purchasing department has to organize a vendor control program to insure the ability of each vendor to supply the required quality level of material. In addition, a vendor rating program has to be established so that there is a constant check on, and recording of, vendor material quality. If the rating system indicates that a vendor is not supplying good quality material, he should be severed from his supply contracts.

Once the design of the product has been

approved, the manufacturing group takes over. A quality assurance department is now needed to constantly monitor processing, assembly, and packaging to insure that the product leaving the plant meets the design specification. The kit of tools for Q.A. includes the usual inspection and test methodology based on statistical sampling theory. One additional point to note is that the Q.A. test results should be fed back to design and development for their analysis and use in improving the product.

Once the product is out of the factory and into the hands of the user, the marketing and sales people play the main role. It is they who advise on applications and observe unusual applications that can be fed back to the designers for their evaluation. It is the sales people who have to evaluate customer complaints and feed back such information, no matter how trivial, in order to have the product corrected before a major incident develops.

The wheel of P.L. prevention cannot be completed without the feedback of customer problems and product uses to the research, development, and design personnel.

CONCLUSION

The engineer is in an ideal position to serve as the key figure in any effort calling for the minimization of financial losses and the concurrent legal exposure due to a product liability event. There is no other "technical type" who normally uses, or has readily available to him, the techniques needed to minimize liability exposure. All that is needed on the part of the engineer is a change of attitude. He has to think "reliable and safe," not just "reliable," as has been his custom to date. In this day and age, it is not enough to have a "reliable" product. Many a reliable product has been unsafe and has resulted in litigation against the manufacturers and distributors of that product.

Some of the standard techniques and tools that are readily adaptable for product safety attainment are:

- 1 Reliability Prediction and Estimation
- 2 Failure Mode and Effects Analysis
- 3 Design Review
- 4 Human Factors and Maintainability
- 5 Maintenance and Failure Reporting
- 6 Subcontractor and Supplier Control
- 7 Standards Development.

"Aided and abetted" by the courts and the law, the problem of product liability/safety has

been pushed to the forefront. It is now up to the manufacturer and the engineer to remove this problem.

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